

I claim:

1. A method of transmitting packets over a computer network, comprising the steps of:

(1) receiving a plurality of data signals of different data types in a device comprising a CPU, a backplane bus, and a plurality of modules coupled to the backplane bus, wherein each of the plurality of modules receives one of the plurality of different data types and presents each data type to the CPU over the backplane bus;

(2) in the CPU, converting each data signal into network packets and transmitting the network packets over a packet network interface to a Wide Area Network (WAN); and

(3) synchronizing delivery of the network packets over the packet network interface with other devices coupled to the packet network in such a way that congestion is avoided on the packet network.

2. The method of claim 1, wherein step (3) comprises the step of synchronizing delivery of the network packets over an Ethernet network interface with other devices so as to avoid congestion over an Ethernet.

3. The method of claim 2, wherein the synchronizing step comprises the step of transmitting a transmission map among one of the other devices, wherein the transmission map indicates a scheduled delivery of packets over the Ethernet.

4. The method of claim 1, wherein step (1) comprises the step of receiving voice data as one of the plurality of data signals.

5. The method of claim 1, wherein step (1) comprises the step of receiving video data as one of the plurality of data signals.

6. The method of claim 1, wherein step (1) comprises the step of receiving voice data as one of the plurality of data signals and video data as another one of the plurality of data signals.

7. The method of claim 6, wherein the voice data comprises analog voice data, and wherein the video data comprises analog video data, and further comprising the step of converting the analog voice data into digital voice data and converting the analog video data into digital video data.

8. The method of claim 1, wherein step (1) comprises the step of receiving stereo audio data as one of the plurality of data signals and presenting the analog stereo audio data in digital form to the CPU over the backplane bus.

9. The method of claim 1, wherein step (1) comprises the step of receiving Ethernet data packets from a network separate from the network interface and presenting the Ethernet data packets to the CPU over the backplane bus.

10. A device for reducing network congestion, comprising:

a CPU;

a backplane bus;

an internal timing system capable of synchronizing with one or more network time sources;

a plurality of modules coupled to the backplane bus, where each module receives data of a different type and presents each data type to the CPU over the backplane bus; and

a packet network interface connectable to a packet network;

wherein the CPU converts the data from each of the plurality of modules into network packets and transmits the network packets through the packet network interface over the packet network, wherein each data packet comprises data received from one of the plurality of modules, and wherein the CPU synchronizes delivery of the network packets in such a way as to avoid contention with other devices coupled to the packet network.

11. The device of claim 10, wherein one of the plurality of modules receives voice data and presents digital voice signals and presents the digital voice signals to the CPU.

12. The device of claim 10, wherein one of the plurality of modules coupled to the backplane bus comprises a video interface unit that receives video signals and presents digital video signals to the CPU.

13. The device of claim 10, wherein one of the plurality of modules coupled to the backplane bus comprises an Ethernet interface that is separate from the packet network interface, wherein the Ethernet interface transmits packets received from an Ethernet network to the CPU over the backplane bus.

14. The device of claim 10, wherein one of the plurality of modules coupled to the backplane bus comprises a synchronous data interface that receives synchronous data and presents it to the CPU over the backplane bus.

15. The device of claim 10, wherein one of the plurality of modules coupled to the backplane bus comprises an asynchronous data interface that receives asynchronous data and presents it to the CPU over the backplane bus.

16. The device of claim 10, wherein the timing system synchronizes delivery of packets with other devices coupled to the same packet network, so as to avoid congestion on an Ethernet.

17. A system comprising a plurality of devices as recited in claim 10, wherein each device is coupled to the same packet network; and wherein each device synchronizes packet delivery over the packet network with packet delivery in the other devices so as to avoid congestion on the packet network.

18. The system of claim 17, wherein each device synchronizes packet delivery over the packet network by agreeing upon time slots during which network packets will be delivered over the packet network.

19. The system of claim 18, wherein each device synchronizes packet delivery over the packet network by receiving a transmission map from a designated master device, wherein the transmission map indicates time slots that are available for transmission over the packet network.

20. A method of reducing contention on an Ethernet LAN coupled to a Wide Area Network (WAN), comprising the steps of:

(1) collecting in a single device a plurality of different data signals including at least analog voice data and analog video data, wherein the received data signals are not synchronized with each other;

(2) converting each of the plurality of different data signals into digital form;

(3) transmitting the data signals in digital form from step (2) over a backplane bus to a CPU in the device;

(4) in the CPU, converting the digital data into network packets destined for delivery over the Ethernet LAN and over the WAN; and

(5) in the CPU, scheduling the network packets over the Ethernet LAN in such a way as to avoid contention among network packets that would otherwise occur if the network packets had been processed by separate devices coupled to the Ethernet LAN.